

AMENDMENTS TO THE DRAWINGS:

Please replace Figure 9 and Figure 13A with the attached substitute Figure 9 and Figure 13A.

REMARKS

In the Office Action dated August 24, 2006, Claims 17-33 are pending. Claims 26-33 are withdrawn from consideration. Claims 17-25 are considered on the merits. The specification and Claim 20 is objected to for certain informalities. Claims 17-25 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Claims 17-25 are rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite.

This Response addresses each of the Examiner's objections and rejections. Applicants therefore respectfully submit that the present application is in condition for allowance. Favorable consideration of all pending claims is therefore respectfully requested.

The specification is objected to for certain informalities. The Examiner indicates that the parent application (U.S. Application No. 09/872,881) has now been abandoned. The Examiner requires that Applicants update this information in the first sentence of the specification. Additionally, the Examiner states that Figures 9 and 13A contain nucleotide sequences with more than ten nucleotides that are not identified by SEQ ID NOs in either Figures 9 and 13A or the Brief Description of the Several Views of the Drawing.

Pursuant to the Examiner's requirements, Applicants have amended the first paragraph of the specification in which the information of the abandonment of U.S. Application No. 09/872,881 is now updated. Additionally, Applicants have replaced Figures 9 and 13A with substitute Figures 9 and 13A and amended the relevant parts of the Brief Description of the Several Views of the Drawing to identify the respective nucleotide sequences that are recited in Figures 9 and 13A by SEQ ID NOs. Support for the sequence information in substitute Figures 9

and 13A and the respective brief descriptions is found in the Sequence Listing. No new matter is introduced by the above-mentioned amendments.

Claim 20 is objected to under 37 C.F.R. 1.75(c) as allegedly in improper dependent form. The Examiner alleges that Claim 20 fails to further limit the subject matter of a previous claim because claim 18 includes all limitations recited in claim 20.

Applicants have amended claim 20. Applicants submit that Claim 20, as amended, now depends from Claim 17 and is directed to a method for detecting nucleic acids by using flag sequences having 3 units. Claim 17 recites flag sequences having four units. Thus, Claim 20 further limits the subject matter of Claim 17.

Accordingly, the objections to the disclosure and Claim 20 are obviated and withdrawal thereof is respectfully requested.

Claims 17-25 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. The Examiner alleges the specification fails to define or provide descriptive support for Claims 17-25. The Examiner states that Applicants did not indicate which part in the specification supports these claims when these claims were presented in a preliminary amendment.

In response, Applicants have now canceled Claim 18 and incorporated the subject matter of Claim 18 into Claim 17. Applicants also amended 19-25 to clarify the language of the claims. Applicants reserve the right to pursue claims 17-25 as previously presented.

Support for the amendments to Claims 17 and 19-25 can be found throughout the specification, original Claims 1-16 and Figures 1-19. For example, support for the amendment to Claim 17 is found in Figures 4-6, on page 19, line 6 to page 20, line 16 (detection of plurality of nucleic acids), page 34, line 10 to page 35, line 5 (structures of probes A and B), page 36,

lines 15-24 (flag sequence containing SD+D0+D1+ED), page 36, line 25 to page 37, line 7 (exemplifying converting partial sequences of different target nucleic acids (F, S) into respective corresponding of combinations D0 and D1 of the flag sequences). To clarify the language of the specification and claims, Applicants refer to partial sequences of different target nucleic acids (N1, N2, . . . Nn) as (Fa, Sa) in which "a" is an arbitrary natural number not more than "n" (i.e., $a_{\max}=n$). Similarly, Applicants refer to flag sequences D0 and D1 as D0_j and D1_k in which j and k are arbitrary natural numbers not less than "n" (i.e., j_{\max} and $k_{\max} \geq n$). Support for the arbitrary natural numbers "a", "j" and "k" can be found in the context of the specification, e.g., on page 36, line 25 to page 37, line 7 and Figure 7A.

Moreover, Applicants respectfully submit that support for Step (b) of Claim 17, as amended, is found on page 37, lines 7-14, page 42, lines 11-18 and Figures 5 and 6; support for Step (c) of Claim 17 is found on page 37, lines 15-26; support for Step (d) of Claim 17 is found on page 37, line 27 to page 38, line 5; support for Step (e) of Claim 17 is found on page 38, lines 10-13; support for Step (f) of Claim 17 is found on page 38, lines 13-22; and support for Step (g) of Claim 17 is found on page 39, line 5 to page 40, line 17.

Applicants further submit that support for Claim 19, as amended, is found in Figure 6 and the specification on page 42, line 1 and page 43, lines 1-8. Support for Claim 20, as amended, is found at page 5, line 15 to page 6, line 5. Support for the amendment to Claim 21, is found on page 40, lines 18-27 and Figure 7B. Support for Claim 22, as amended, is found in the Experimental Method starting at page 44, line 18 through page 45, line 11. Support for Claim 23, as amended, is found on page 15, lines 5-13. Support for Claim 24 as amended, is found on page 41, line 26 to page 42, line 2. Support for Claim 25, as amended, is found on page 35, lines 1-2.

Accordingly, Applicants respectfully submit that the claims as presently submitted are fully supported by the disclosure of the present application in such a way as to convey one skilled in the art that the inventors of the present invention had possession of the claimed invention at the time the present application was filed. No new matter is introduced. Therefore, the rejection of Claims 17 and 19-25 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement is overcome. The rejection with respect to Claim 18 is moot in view of the cancellation of the claim. Withdrawal of the rejection of claims 17-25 under 35 U.S.C. §112, first paragraph is therefore respectfully requested.

Claims 17-25 are rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite.

The Examiner states that Claim 17 recites the limitation "nucleic acid constructing the flag" in step (e) of the claim. The Examiner alleges that there is insufficient antecedent basis for this limitation in the claim because there is no phrase "nucleic acid constructing the flag" in steps (a) to (d) of the claim. The Examiner also alleges that Claim 17 is vague and indefinite in view of the phrase "the single-stranded flag sequence obtained by the encode reaction" in step (f) because step (e) does not indicate that a single-stranded flag sequence is produced by an encoding reaction. Further, the Examiner alleges that Claim 17 is vague and indefinite in view of the phrase "the nucleic acid molecule obtained by the decode reaction" in step (g) because step (f) does not indicate that a nucleic acid molecule is produced by a decoding reaction.

Applicants have clarified the language of Claim 17, which, as amended, no longer recites the allegedly objectionable phrases. Applicants submit that Claim 17, as amended, is clear and definite.

The Examiner alleges that Claim 18 is vague and indefinite. Applicants submit that this aspect of the rejection is moot in view of the cancellation of Claim 18.


The Examiner states that Claim 19 recites the limitation "the single-stranded sequence encoded to a PCR" in the claim. The Examiner alleges that there is insufficient antecedent basis for this limitation. The Examiner alleges that Claim 19 is vague and indefinite because it is unclear whether "the single strand" in step (iv) is a single-stranded PCR product in step (iii) or the single-stranded sequence encoded by a PCR reaction.

Applicants have amended Claim 19 by clarifying the language of the claim. Applicants submit that Claim 19, as amended, is clear and definite.

Accordingly, the rejection of Claims 17-25 under 35 U.S.C. § 112, second paragraph, is overcome and withdrawal thereof is respectfully requested.

In view of the foregoing amendments and remarks, it is firmly believed that the subject application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "P. Bernstein", with a long horizontal flourish extending to the right.

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